

REMARKS/ARGUMENTS

Introduction:

Independent claims 102, 107, 108, and 129 are amended, and claim 85 is canceled. Claims 102-137 are now pending in the application. (Claims 1-84 and 86-101 were previously canceled.) Claims 103 and 135 had previously been withdrawn from consideration. Applicants respectfully request reexamination and reconsideration of the application.

Claims 102, 107-110, 114-116, 121-123, and 125-137 were rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 5,286,208 to Matsuoka ("Matsuoka "). In addition, claims 85, 104-106, 111-113, 117-119, and 124 were rejected under 35 USC § 103(a) as being obvious in view of Matsuoka. Applicants respectfully traverse these rejections.

Independent claim 102:

Independent claim 102 now incorporates the features of former claim 85. Claim 102 now recites that "the first leaf portion comprises a structural material deposited on a conductive seed material." The PTO acknowledges that neither spring portion 14 nor spring portion 15 of Matsuoka comprises a structural material deposited on a conductive seed material. The PTO nevertheless asserts that it would be an obvious design choice to select as materials for one of the spring portions 14 or 15 a structural material deposited on a conductive seed material because it has been held obvious to "select a known material on the basis of its suitability for the intended use." The PTO has not shown, however, that a structural material deposited on a conductive seed material are suitable materials for spring portions 14 and 15. As disclosed in Matsuoka, the intended use of spring portions 14 and 15 is as spring structures. The PTO has not shown that a seed material is suitable for or would in any way enhance the intended spring characteristics of spring portions 14 and 15. The PTO has therefore not established a line of reasoning that would lead a person of ordinary skill in the field to construct Matsuoka's spring portions 14 and 15 as a structural material deposited on a conductive seed material. The PTO therefore has not established a *prima facie* case of obviousness.

Moreover, as is known, a conductive seed material can function as the cathode or anode in an electroplating system. Because of the conductive seed material, the first leaf portion of claim 102 can be made by electroplating the structural material onto the seed

material, which can be a fast and efficient way to make the first leaf portion of claim 102. Matsuoka's spring portions 14 and 15 do not comprise a seed layer, and therefore cannot be made using the fast and efficient method of electroplating. Thus, the material composition of the first leaf portion recited in claim 102 provides advantages not found in Matsuoka, which is evidence tending to show that claim 102 is not obvious in view of Matsuoka.

For at least the foregoing reasons, claim 102 is patentable over Matsuoka.

Claims 85, 103-106, 125, 126, and 136 depend from claim 102 and, at least because of that dependency, are also patentable over Matsuoka.

Independent claim 107:

Independent claim 107 now recites that “the underside of said one leaf portion immediately below the contact tip defin[es] an open space into which said first side can be deflected when the contact tip is depressed.” Figures 25a through 26b illustrate a non-limiting example in which there is an open space below the leaf portion with the contact tip. Matsuoka's device, as exemplified by the marked-up copy of Figure 4 included in the Office Action, has no open spaces immediately below the contact tip; rather, element 16b, labeled “second support (post structure)” in the marked up version of Figure 4 attached to the Office action, is immediately below the contact tip. Moreover, it would be contrary to the teachings and purpose of Matsuoka to remove element 16b. The purpose of Matsuoka is to precisely control the amount of forward and backward movement of tip 16c, and this can only be accomplished by precise control of the flexing of spring portions 14 and 15. (Matsuoka col. 2, lines 35.) Without portion 16b, only spring portion 14 would flex, and the precise control of the amount of forward and backward movement of tip 16c in response to contact by terminal 18 (see Figure 3 of Matsuoka) could not be achieved. Portion 16b is thus essential to Matsuoka and cannot be removed. For at least the foregoing reasons, Matsuoka neither anticipates nor renders obvious claim 107.

Claims 127, 128, and 137 depend from claim 107 and, at least because of that dependency, are also patentable over Matsuoka.

Applicants note that the word "other" was changed to "another" at the end of claim 107 to correct a typographical error. The foregoing change was not made for reasons relating to patentability.

Independent claim 108:

Independent claim 108 now recites that "at least two of said plurality of support structures [are] offset from the contact tip." The two alleged support structures identified by the PTO in the marked-up copy of Figure 4 attached to the Office Action are not both offset from the contact tip. Instead, support structure 16b is aligned with the contact tip. Moreover, consistent with the discussion above with regard to claim 107, the location of 16b is essential to the purpose and intended operation of Matsuoka's contact 11 and therefore cannot be moved. For at least these reasons, Matsuoka neither anticipates nor renders obvious claim 108.

Claims 109-124 depend from claim 108 and, at least because of that dependency, are also patentable over Matsuoka.

Independent claim 129:

Independent claim 129 recites a beam structure with a contact tip structure "extending . . . from a first end of said beam structure" and "an attachment structure extending . . . from a second end of said beam structure." Claim 129 also recites that "substantially all of said attachment structure [is] located at said second end, said attachment structure configured to attach said interconnect element to an electronic component." The PTO equated portions 12 and 13 of Matsuoka's contact 11 with the attachment structure of claim 129. As can be seen in Figure 4 of Matsuoka, however, only a small portion of 12 and no part of 13 is located at what the PTO designated the second end of the structure comprising spring portions 14 and 15 and what the PTO labeled the first support and the second support in the marked up version of Figure 4 of Matsuoka attached to the Office Action. For this reason alone, Matsuoka does not anticipate claim 129.

Moreover, claim 129 also recites that the attachment structure extends an effective distance from the second end of the beam structure such that, "while attached to said electronic component, said beam structure is disposed approximately said effective distance from said electronic component." Per the foregoing, the electronic interconnect element of claim 129 can

be attached directly by its attachment structure any where on a surface of the electronic component with the beam structure configured as a cantilevered beam disposed away from the electronic component. For example, the attachment structure can be attached directly to a flat terminal on the electronic component. In contrast, Matsuoka's contact 11 cannot be attached directly to a surface (e.g., a terminal) of an electronic component but can be attached only to an electronic component, such as a printed circuit board, specially configured with a hole to receive element 13 as an insert. Thus, not only does Matsuoka fail to disclose features recited in claim 129, but Matsuoka's contact 11 is not as versatile or useful as the interconnect element recited in claim 129.

Claims 130-135 depend from claim 129 and, at least because of that dependency, are also patentable over Matsuoka.

Conclusion:

In view of the foregoing, Applicants submit that all of the claims are allowable and the application is in condition for allowance. If the Examiner believes that a discussion with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at (801) 323-5934.

Respectfully submitted,

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